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REVEAL NEW ACCOMPLISHMENTS IN HIGH-SPEED MACHINING

NEW ALLOY REPLACES POBEDIT -- Tashkent, Pravda Vostoka, 19 Aug 51

The Leningrad Machine Tool Building Plant imeni Il'ich has started to use a new alloy, thermocorundum. It is replacing expensive pobedit plates and other hard-alloy materials. Arbors of special design have been manufactured for holding the thermocorundum. With the use of thermocorundum, metal can be machined at a speed of 5,000 revolutions per minute.

With the use of the new alloy, cast iron can be machined at the same speeds as steel. Untreated and heat-treated metals lend themselves equally well to machining.

PERFECT NEW CUTTERS WITH THERMOCORUNDUM BLADES -- Leningradskaya Pravda, 17 Oct 51

The use of cutters with tips made of thermocorundum instead of hard alloy is a new scientific and technical achievement.

On 9 October, at the Leningrad Palace of Scientific and Technical Propaganda, Vasil'yanov, Sedov, and Ganfel'd, innovators at the Leningrad Machine Tool Building Plant imeni Il'ich, described their experiences in high-speed machinery of cast iron and steel with the new cutters, and explained the methods of their manufacture to representatives from 40 industrial enterprises and 20 institutes.

The thermocorundum cutting tool was perfected and widely introduced into production at the plant in close cooperation with the inventors of the new tool material, the All-Union Scientific Research Institute of Abrasives and Grinding.

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GIVE OLD TOOLS NEW LIFE -- Moscow, Trud, 18 Aug 51

A new method of metallizing counterbores is saving a great deal of metal at the Mytishchi Machine Building Plant. Punches are restored by means of fusing on a harder metal, "sormait." For a long time broken drills did not lend themselves to restoration because at the moment that the cutting part was welded to the shank, the drill burned up. A special attachment has eliminated this difficulty.

The restoration of thread ring gauges is also possible.

USE ANODE-MECHANICAL TOOL-GRINDING MACHINE AT REPAIR PLANT -- Riga, Sovetskaya Latvya, 3 Aug 51

A brigade of engineers of the Riga Affiliate of the All-Union Office of Technical Aid in the Use of Hard Alloys has conducted some interesting work on the introduction of high-speed cutting at the Daugavpils Locomotive and Railroad-Car Repair Plant.

The success of using a cutting tool with hard-alloy blades depends first of all on the degree of accuracy to which it has been ground and finished. To solve this problem, the engineers of the affiliate have designed and manufactured an anode-mechanical tool-grinding machine, and a machine tool for finishing cutters.

In the process of testing the hard-alloy tools, special instructions were given to the workers. They were shown how to install the workpiece, how to secure the cutters, how to use them in operation, and how to change them for regrinding. One hundred ten workers attended the series of lectures.

The experiments of the engineers showed that high-speed methods of metal-working can be used with success not only at plants engaged in mass and series production, but also at repair enterprises engaged in small-series production which have a large variety of parts to be processed. -- A. Skvirskiy, senior engineer, Riga Affiliate of the All-Union Office of Technical Aid in the Use of Hard Alloys

CONDUCT RESEARCH ON HIGH-SPEED GRINDING -- Leningradskaya Pravda, 29 Aug 51

Among the many problems in modern techniques, converting to high-speed methods of grinding metal is one of the most important.

Until recently, the solution of this problem, was difficult mainly because of two obstacles; the lack of high-speed grinding technology and the lack of abrasive wheels sufficiently durable to grind at speeds exceeding 35 meters per second.

Industrial manufacture of grinding wheels suitable for work at increased speeds was perfected at the Leningrad Il'ich Abrasives Plant, and at Moscow abrasives enterprises. Other plants of Glavabraziv (Main Administration of Abrasives Industry) are preparing to produce high-speed grinding wheels.

By order of the Minister of Machine Tool Building, USSR, the abrasives industry must produce high-speed wheels in such number as to assure the conversion of several hundred grinding machines to high-speed methods in 1951.

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A great deal of research on a new-composition bond for ceramics, assuring durability of the abrasive wheel, was conducted by N. Ye. Filonenko, a woman Doctor of Technical Sciences. S. G. Voronov, N. P. Popov, and N. P. Egornik, engineers; and V. N. Lyubomudrov participated actively in this project.

Tests were conducted and the results of experimental work on high-speed grinding were introduced at a number of machine building plants by workers of the All-Union Scientific Research Institute of Abrasives and Grinding. Special attention was given to this matter by V. D. Glyass, T. L. Kogan, and M. G. Proskuryakov, scientists at the institute.

Close ties and collaboration along creative lines were established with workers of the Sestroretsk Tool Plant imeni Voskov, Leningrad Machine Tool Building Plant imeni Sverdlov, and the Moscow Kalibr, Frezer, and Krasnyy Proletariy plants.

One important task was to prepare and impress on the workers the fact that high-speed grinding can and will give good results. Although few in number, some workers engaged in grinding operations in actual practice lacked the endurance and persistence necessary in the perfection of high-speed grinding methods.

At the Plant imeni Sverdlov, high-speed grinding of shafts up to 3 meters long was mastered by Stakhanovite Ts. K. Karpov.

The effectiveness of high-speed grinding is borne out by the following facts. The productivity in grinding drills, coned cutters, and hand reamers at the Plant imeni Voskov has increased an average of 150-215 percent at the Plant imeni Sverdlov; in grinding shafts and screws, from 190-300 percent.

At present, high-speed grinding is spreading to many other plants of the Ministry of Machine Tool Building. Preparations for conversion of high-speed grinding are also being made at enterprises of other ministries, including the Automobile Plants imeni Stalin and imeni Molotov.

Other plants, however, are lagging in the introduction of this new technique. These include the Leningrad Kirov Plant and the Plant imeni Karl Marx.

Work is now being conducted at laboratories and shops of the experimental plant of the institute for further increase in grinding speeds. A group of engineers have already developed new improved designs of grinding wheels which will bring the speed of grinding up to 75-90 meters per second. -- V. Rybakov, deputy director of the All-Union Scientific Research Institute of Abrasives and Grinding; A. Kartashev, engineer

DESIGNS TWO-EDGE MILLING CUTTER -- Moscow, Trud, 1 Aug 51

N. Turulov, an engineer at the Moscow Small-Displacement Automobile Plant, has designed a milling cutter with two cutting edges which reduces milling time more than half. This will make possible the simultaneous machining of two parts.

Double-edge milling has been adopted on vertical machine tools of various types at the Moscow Small-Displacement Automobile Plant. It is being used in 16 operations. In the third quarter, the new method will be used in 15 more operations. This will reduce labor consumption in manufacturing an automobile by one hour.

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The advantages of double-edge milling have been proved in practice. The experience at the plant has shown that it is more productive than ordinary high-speed milling. The new tool will increase the productivity of milling machines several times and free this equipment for other operations.

The Ministry of Machine Tool Building must study the principles of double-edge face and surface milling and organize the output of vertical machine tools on which the double-edge milling cutters can be used. Their productivity will be much greater than the productivity of more complex and expensive vertical lathes.

MECHANIZE LABOR-CONSUMING OPERATIONS -- Tbilisi, Zarya Vostoka, 12 Aug 51

To increase labor productivity and the output of castings, three additional overhead traveling cranes and two new molding machines have been installed and put into operation in the molding shops of the Tbilisi Tsentrolit Plant.

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